

## CLAIMS

1. A lithium ion secondary battery comprising:
  - (a) a positive electrode;
  - (b) a negative electrode;
  - (c) a separator interposed between said positive electrode and said negative electrode; and
  - (d) an electrolyte comprising a lithium salt and a non-aqueous solvent dissolving said lithium salt,wherein said separator comprises a porous film layer, said porous film layer comprising basic solid particles and a composite binder, and being adhered to at least one surface of at least one of said positive electrode and said negative electrode,  
said composite binder comprises a primary binder and a secondary binder,  
said primary binder comprises polyether sulfone and  
said secondary binder comprises polyvinylpyrrolidone.
2. The lithium ion secondary battery in accordance with claim 1, wherein said basic solid particles comprise at least  $\alpha$ -alumina.
3. The lithium ion secondary battery in accordance with claim 1, wherein the weight ratio between said basic solid particles and said composite binder contained in said porous film layer is 96:4 to 99.5:0.5.
4. The lithium ion secondary battery in accordance with claim 1, wherein said positive electrode comprises a

lithium-containing composite oxide.

5. The lithium ion secondary battery in accordance with claim 1, wherein said negative electrode comprises a carbonaceous material.

6. The lithium ion secondary battery in accordance with claim 1, wherein the weight ratio between said primary binder and said secondary binder contained in said composite binder is 1:10 to 10:1.